

AMENDED SET OF CLAIMS

1. (Previously Presented) A method of detecting a protein-protein interaction, comprising:

(a) providing a cell that contains a first heterologous conjugate and a second heterologous conjugate,

wherein said first heterologous conjugate comprises

(1) a first protein of interest, wherein said first protein of interest is a translocatable protein, conjugated to

(2) a detectable group, and

wherein said second heterologous conjugate comprises

(1) a second protein of interest conjugated to

(2) a known protein, wherein said known protein specifically binds to an internal structure within said cell, wherein said protein that specifically binds to an internal structure is a protein kinase C isoform or a fragment thereof that specifically binds to an internal structure;

(b) inducing translocation of said first protein of interest; and

(c) detecting the signal from said detectable group, wherein said signal being localized at said internal structure is indicative of specific binding between said first and said second proteins of interest.

2. (Original) A method according to claim 1, wherein said detectable group is a protein, and said first protein and said detectable group together comprise a fusion protein.
3. (Previously Presented) A method according to claim 1, wherein said first heterologous conjugate is encoded by a nucleic acid.
4. (Currently Amended) A method according to claim 1, wherein said second heterologous conjugate is protein of interest and said known protein together comprise a fusion protein.
5. (Previously Presented) A method according to claim 1, wherein said second heterologous conjugate is encoded by a nucleic acid.
6. (Previously Presented) A method according to claim 1, wherein said first and second proteins of interest are known to specifically bind to one another.

7-10. (Cancelled).

11. (Original) A method according to claim 1, wherein said second heterologous conjugate further comprises a detectable

group.

12. (Original) A method according to claim 1, wherein said cell is a eukaryotic cell.

13. (Original) A method according to claim 1, wherein said cell is a yeast, plant, or animal cell.

14. (Original) A method according to claim 1, wherein said cell is a mammalian cell.

15-22. (Cancelled).

23. (Previously Presented) A method according to claim 1, wherein said protein that specifically binds to an internal structure is a protein kinase C fragment selected from the group consisting of C1 domains and C2 domains.

24. (Original) A method according to claim 1, wherein said first and second proteins of interest are the same.

25. (Original) A method according to claim 1, wherein said first and second proteins of interest are different.

26-46. (Cancelled).

47. (Previously Presented) The method according to claim 1, wherein said detectable group is a Green Fluorescent Protein (GFP).

48. (Previously Presented) The method according to claim 1, wherein said localization occurs when said first protein of interest binds directly to said second protein of interest.

49. (Previously Presented) The method according to claim 1, wherein the step of inducing translocation comprises adding a phorbol ester.

50. (New) The method according to claim 1, wherein said protein that specifically binds to an internal structure is Ca^{2+} /calmodulin dependent protein kinase II α (CaMKII α) or Ca^{2+} /calmodulin dependent protein kinase II β (CaMKII β).

AMENDMENTS TO THE DRAWINGS:

Please replace the current Figure 4 with the replacement formal Figure 4 attached hereto.